



ALABAMA EMERGENCY MANAGEMENT AGENCY HAZARD MITIGATION GRANT PROGRAM DRAINAGE

PROJECT APPLICATION

Applicant City of Watertown

Project Location Main St. at Swift Creek, Watertown,
Waterford County, Alabama
(street, city, county, and state)

Project Title (descriptive) Main Street/Swift Creek Culvert
Upgrade

Estimated Project Cost (total) \$153,650.00

THIS SECTION FOR STATE USE ONLY

FEMA-____-DR-____

- ☐ Standard HMGP or
☐ HMGP 5% Initiative
☐ FMA
☐ Other _____

- ☐ Initial Submission or
☐ Resubmission

- ☐ Completeness Checklist
☐ State 409 Plan
☐ Eligible Applicant
☐ B/C Analysis

Project Type(s)

- ☐ Acquisition/Demolition
☐ Acquisition/Relocation
☐ Elevation
☐ Drainage
☐ Wind Retrofit
☐ Tornado
☐ Seismic Retrofit
☐ Other _____

Community NFIP Status:

- ☐ Participating Community
ID #: _____
☐ CRS Participant
☐ In Good Standing
☐ Sanctioned
☐ Regulatory Floodway
☐ Coastal V-Zone

State Application ID _____

Date Received _____

State Reviewer _____

Reviewer Phone # _____

Reviewer Fax # _____

Reviewer Email: _____

This application is for all Federal Emergency Management Agency (FEMA Region IV) Hazard Mitigation Grant Program (HMGP) proposals. Please complete ALL sections and provide the documents requested. If you require technical assistance with this application, please contact your State Emergency Management Mitigation Division at (205)280-2476.

A. To Fill Out This Application: complete all sections of the main application, if the project involves acquisition, elevation or engineered drainage projects fill out the following supplemental worksheets:

- **Acquisition Worksheet:** Acquisition Projects only -- one per structure
- **Elevation Worksheet:** Elevation Projects only -- one per structure
- **Drainage Worksheet:** Drainage Projects only

B. Applicant Information

1. **Applicant (Organization)** City of Watertown

2. **Applicant Type**

☒ State or Local Government ☐ Recognized Indian Tribe ☐ Private Non-Profit

3. County / Counties Waterford

4. State Legislative district(s) #18 Congressional District(s) #2

5. Tax I.D. Number 023761482 FIPS Code (if known) H731437 Duns Number FS17634

6. **Point of Contact**

☒ Ms. ☐ Mr. ☐ Mrs. First Name Frances Last Name Mule

Title Public Works Director

Street Address 15 Main St.

City Watertown State AL Zip Code 35162

Telephone (334) 789-1234 Fax (334) 789-7654

Email Address (if available) fmule@town.watertown.al.us

7. **Application Prepared by:** ☐ Ms. ☐ Mr. ☒ Mrs. First Name Jane Last Name Jones

Title Consultant Telephone (334) 750-1287 Fax (334) 750-2376

8. **Authorized Applicant Agent**

☒ Ms. ☐ Mr. ☐ Mrs. First Name Sally Last Name Smith

Title Mayor Telephone (334) 750-2948 Fax (334) 750-5957

Street Address 20 Main St.

City Mobile State AL Zip Code 33595

Email Address (if available)

Date 15 January 2006 **Signature**

Sally Smith

NOTE: If your project is approved, work must begin within 90 days of the obligation of funds

I. History of Hazards / Damages in the Area to be Protected*

In this section describe all past damages from hazardous events (include name of storms if applicable) in the project area. Include Presidentially declared disasters as well as events that did not result in a Presidential declaration. Do not list county-wide or community-wide damages. Damages described must be site specific.

There have been repetitive damages to the area adjacent to Main Street in Watertown due to persistent flooding caused by the undersized 60-inch diameter corrugated metal pipe culvert along Swift Creek. As a result of the increase in development in the upstream watershed over the years, the existing culvert no longer has the hydrologic capacity to accommodate the flow during large storm events, causing Swift Creek to overtop Main Street, closing the road to traffic and necessitating the need for extensive repairs. Main Street is a high-traffic-volume road in the community and is one of the main access routes in the county. Average daily traffic volumes on this corridor exceed 10,000 vehicles per day. If Main Street is impassable, emergency detours are implemented by local public safety personnel. Loss of function to this corridor has had major negative impact to the transportation network in the region.

A city street map is attached with the application highlighting the location of the culvert. Also attached are photos of road overtopping that occurred during the June 17, 2002 storm. That storm was determined to be a 10-year event. Six overtopping occurrences over a twenty year period are described in the Damage Overview section below.

Post-flood maintenance and repair costs, including repavement of the road surface, regrading of the eroded gravel shoulders and road embankment, cleanup of debris washed onto the road surface and within the channel upstream of the culvert and repairs to the CMP culvert have cost the community over \$215,000 in the past 20 years. **Force-account material and labor records for repairs after 6 different flood events are summarized in a table included with the application.** Although there have been no occurrences of flood damage to private structures, flood events have caused conditions where standing water has prevented access to public streets and properties.

The proposed project is to replace the undersized 60-inch CMP under Main Street with a double 5 ft. x 5 ft. pre-cast concrete box culvert, which will allow the runoff from a 50-year storm event to pass through the culvert without overtopping the road. Swift Creek is included on the County Firm Panel 00135 as a special flood hazard area Zone AE. **Selected panel, stream profile and Summary Discharges table from the FEMA Flood Insurance Study of 1995 are included with the application.**

A. Overview of Past Damages

Provide a detailed past history of damages in the project area, including direct and indirect costs. Include information for as many past incidents as possible. Attach any supporting documents, i.e. proofs of loss, PW's, force account logs. Direct costs should include damages to structures and infrastructure in the project area as a result of the hazard. Indirect costs should include the cost to the local government to respond to victims of the hazard in the project area, any interruption to local businesses, and losses of public services.

* For Acquisitions and Elevations, provide an overview in this section and specific damages to each property in the Individual Property Worksheets.

Date	Level of Event	Damages	Indirect costs (describe)	
[e.g. 10/7/89	50 year flood	Total of \$195,000 in damages to 16 homes in project area	Emergency Services Evacuation of 58 people.]	
e.g. 8/18/92	100 year flood	Total of \$1,895,000 in damages to 23 homes in project area	Emergency Services Evacuation of 108 people.]	
DATE	EVENT LEVEL	DESCRIPTION	RAINFALL	DAMAGES
2-15-1985	2-year	Severe Thunderstorm	4" Rain - Road Closed 2 hours	\$15,000 repairs
3-15 thru 3-16 1990	10-year	Severe Thunderstorm	6" Rain - Road Closed 4 hours	\$40,000 repairs
5-10-1996	5-year	Severe Thunderstorm	5" Rain - Road Closed 4 hours	\$15,000 repairs
4-18-2000	5-year	Severe Thunderstorm	5" Rain - Road Closed 3 hours	\$15,000 repairs
6-17-2002	10-year	Severe Thunderstorm	6" Rain - Road Closed 6 hours	\$40,000 repairs
8-24-2004	15-year	Hurricane Ivan	8' Rain - Road Closed 12 hours	\$100,000 repairs

Project Description

A. Project Description / Protection Provided

Describe, in detail, the proposed project. Also, explain how the proposed project will solve the problem(s) and provide the level(s) of protection described in Section B. If any other projects are underway or proposed in the project area, please describe. Also describe any planned, future development in the project area. Please include building code requirements for new development and substantial improvements in the community.

The proposed project includes the replacement of an undersized 60-inch corrugated metal pipe (CMP) under Main Street with a 70 ft. long, double, 5 ft. X 5 ft. pre-cast concrete box culvert with concrete head and end walls and erosion control protection measures at both the inlet and the outlet ends of the culvert. **ABC Engineers, Inc. has prepared a preliminary design report (sealed by a Professional Engineer) that includes the hydrologic (USACE HEC-1 model) and hydraulic (Culvert Master) back-up calculations used to size the new structure.** The report includes existing and proposed water-surface elevations upstream of the culvert for various storm recurrence intervals. The analyses show that the existing culvert has a capacity equal to a 1-year storm. The new culvert is designed to accommodate a 50-year storm frequency discharge with a headwater elevation of 108.25 feet, allowing 18-inches of freeboard below the road shoulder (109.8 feet). This design is based on the road culvert standards required per the **2002 County Public Facilities Manual** (applicable sections are attached to the applications). Once construction is complete, frequent storm events will no longer overtop Main Street.

B. Hazards to be Mitigated / Level of Protection

- Select the type of hazards the proposed project will mitigate:
☒ Flood ☐ Wind ☐ Seismic ☐ Other (list) _____

- Fill in the level of protection the proposed project will provide (e.g. 23 structures protected against the 100-year (1%) flood. List data in Flood Levels (10,25, 50, 100...) mph winds or Mercalli Scale Earthquake (1-12)

1 structure protected against the 50 year flood

0 structures protected against the 25 year flood

0 structures protected against the 10 year flood

3. Engineered Projects Only (e.g. Drainage Improvements)

Include (attach to this page) **ALL** engineering calculations used to determine the above level of protection.

The following documents are attached:

**ABC Engineers Inc. Preliminary Design Report (USACE AEC-1 model)
Culvert Master- Calculations to size the new structure.**

4. Useful life of the project

Proposed project will provide protection against the hazard(s) above for 30 years.

Example

III. Project Location

Fully describe the location of the proposed project.

A. Site

1. Physical Location

Describe the area and/or population affected/protected by this project, include the location (street numbers or neighborhoods, city, county, zip codes, latitude/longitude).

Main Street at Swift Creek, Watertown, Waterford County, Alabama 35162;
Latitude - 35.10573 degrees; Longitude - 87.34785degrees

2. Population Affected

Provide the number of each type of structure (listed below) in the project area. Include **all** structures in project area.

- 25 residential properties
- 15 businesses / commercial properties
- 3 public buildings
- 2 schools / hospitals / houses of worship

B. Legible Copy of Flood Insurance Rate Map (FIRM) showing Project Site

☒ Attach a copy of the panel(s) from the FIRM, and, if available, the Floodway Map, (along With the appropriate flood profile and discharge tables from the community FIS) with the project site and structures marked on the map (FIRMs are typically available from your local floodplain administrator who may be located in the planning, zoning, or engineering office. Maps can also be ordered from the Map Service Center at 1-800-358-9616. For more information about FIRMs, contact your local agencies or visit the FIRM site on the FEMA WebPage at <http://www.fema.gov/home/MSM/hardcopy.htm>).

Using the FIRM, determine the flood zone(s) of the project site (Check all zones in the project area).

- ☐ VE or V 1-30
 - ☒ AE or A 1-30
 - ☐ AO or AH
 - ☐ A (no base flood elevation given)
 - ☐ B or X (shaded)
 - ☐ C or X (unshaded)
 - ☐ Floodway
 - ☐ Coastal Barrier Resource Act (CBRA) Zone
- (Federal regulations strictly limit Federal funding for projects in this Zone; please coordinate with your state agency before submitting an application for a CBRA Zone project)

Panel 00135

- ☐ **If the FIRM for your area is not published**, please attach a copy of the Flood Hazard Boundary Map (FHBM) for your area, with the project site and structures marked on the map.

Project Location Continued

C. City or County Map with Project Site and Photographs (All Maps Are Mandatory)

- ☒ Attach a copy of a city or county scale map (large enough to show the entire project area) with the project site and structures marked on the map.
- ☒ USGS 1:24,000 topo map with project site marked on the map.
- ☐ For **acquisition** or **elevation** projects, include a copy of the Parcel Map (Tax Map, Property Identification Map, etc.) with each property in the project clearly marked on the map. Use SAME ID number as in the property worksheet.
- ☒ Attach overview photographs (2 copies each) for each project site. The photographs should be representative of the project area, including any relevant streams, creeks, rivers, etc. and drainage areas which affect the project site or will be affected by the project.

Attach 2 copies of each site photograph here

Clearly label the back of each photo

Notes:

IV. Scope of Work / Budget

In this section, provide the details of all costs of the project. As this information is used for the Benefit-Cost Analysis, reasonable cost estimates are essential. As project administrative costs are calculated on a sliding scale, **do not** include this in the budget. List all items and costs in line item fashion. **Do not include contingency costs in the budget.**

A. Materials

Item	Dimension	Quantity	Cost per Unit	Total Cost
Reinf. Pre-cast Concrete Box Culvert	2@5'x5'x70 lf	70 lf	\$500.00/lf	\$35,000.00
Pre-cast conc. Head and end walls		2 ea	\$5,000.00 ea	\$10,000.00
Relocate existing utilities		lump sum		\$10,000.00
Crushed stone	¾"	500 ton	\$4.50/ton	\$2,250.00
Gravel		750 ton	\$4.00/ton	\$3,000.00
Erosion Control		lump sum		\$5,000.00
Asphalt		250 ton	\$50.00/ton	\$12,500.00

B. Labor (Include equipment costs -- please indicate all "soft" or in-kind matches)

Description	Hours	Rate	Cost
Mobilization		lump sum	\$10,000.00
Install Box Culvert	500	\$30.00/hr	\$15,000.00
Install Head and End Walls	200	\$30.00/hr	\$6,000.00
Relocate exist. Utilities	100	\$30.00/hr	\$3,000.00
Place crushed stone and gravel	80	\$30.00/hr	\$2,400.00
Install erosion control	25	\$20.00/hr	\$500.00
Place asphalt road surface	50	\$50.00/hr	\$2,500.00

C. Fees Paid Include any other costs associated with the project

Description of Task	Hours	Rate	Cost
Engineering		lump sum	\$15,000.00
Permits		lump sum	\$5,500.00
Project Management		lump sum	\$16,000.00

Total Estimated Project Cost \$153,650.00

D. Funding Sources (round figures to the nearest dollar) The maximum FEMA share for HMGP projects is 75%. The other 25% can be made up of State and Local funds as well as in-kind services. HMGP funds may be packaged with other Federal funds, but other Federal funds (except for Federal funds which lose their Federal identity at the State level – such as CDBG, ARS, HOME) may not be used for the State or Local match.

Estimated FEMA Share **\$115,237.50** **75 % of Total**

Non-Federal Share

Estimated Local Share **\$38,412.50** **25 % of Total**

Attach any continuations or additional items to this page

(Include In-Kind Value)

List Funding Sources cash

Estimated State Share \$ _____ % of Total

List Funding Sources _____

Estimated Other Agency Share

\$ _____ % of Total

Identify Other Non-Federal Agency _____

Other Non-FEMA Federal Funds

\$ _____

Do Not Include In Total

Identify Other Federal Agency _____

Scope of Work/ Budget Continued

E. Project Milestones List the major milestones in this project:

Milestone	Number of Days to Complete
[e.g. Demolition of 6 structures and removal of debris	14 days]
Engineering Design	90 days
Permitting	30 days
Bid Preparation	30 days
Award	20 days
Construction	60 days
Closeout	20 days
Total	260 days

F. Benefit Cost Ratio: 2.36

A preliminary Benefit Cost Analysis was performed by the applicant's consultant utilizing the FEMA BCA software. Copy of the results is attached for review.

Example

Alternative Actions

This application cannot be reviewed if this section is incomplete.

List **two feasible** alternative projects to mitigate the hazards faced in the project area. One alternative is the "No Action Alternative" (section A).

A. No Action Alternative

Discuss the impacts on the project area if no action is taken.

No action will result in continued flooding and instead of mitigating future damage, money will be spent to repair flood damage.

B. Other Feasible Alternative

Discuss a feasible alternative to the proposed project. This could be an entirely different mitigation method or a significant modification to the design of the current proposed project. Please include scope of work, engineering details (if applicable), estimated budget and the impacts of this alternative.

1. Other Feasible Project Description and Scope of Work

Describe, in detail, the alternative project. Also, explain how the alternative project will solve the problem(s) / provide protection from the hazard(s).

The construction of a detention pond, piping and flood control appurtenances could mitigate the volume of storm water run-off at the Swift Creek crossing. The existing 60" cmp under Main Street at Swift Creek would remain in place under this scenario. The detention/flood control facility would have to be 200 feet wide and 300 feet long. **A preliminary engineered plan is attached that indicates the location, size and hydrologic characteristics of the proposed detention pond and associated flood control appurtenances.**

The acquisition and demolition of several private properties would be required to construct a detention/flood storage facility adjacent to the Swift Creek/Main Street area. **These properties, associated descriptions and appraised values are listed in a table on a separate sheet attached.**

Preliminary cost estimate for the alternative project follows:

1. Acquisition and demolition of private properties:	\$950,000
2. Construction of detention/flood control facility:	\$250,000
3. Engineering, permits and project management:	\$25,000
TOTAL	\$1,225,000

2. Other Feasible Project Location

- ☐ Attach a map or diagram showing the alternative site in relation to the proposed project site.
- ☐ Photographs (2 copies) of alternative site

Attach 2 copies of each photograph here

Clearly label the back of each photo.

Alternative Actions Continued

C. Funding Sources (round figures to the nearest dollar) The maximum FEMA share for HMGP projects is 75%. The other 25% can be made up of State and Local funds as well as in-kind services. HMGP funds may be packaged with other Federal funds, but other Federal funds (except for Federal funds which lose their Federal identity at the State level – such as CDBG, ARS, HOME,) may not be used for the State or Local match.

Estimated FEMA Share	\$918,750	<u>75</u> % of Total
Non-Federal Share		
Estimated Local Share (Include In-Kind Value)	\$306,250	<u>25</u> % of Total
List Funding Sources	_____	
Estimated State Share	\$ _____	% of Total
List Funding Sources	_____	
Estimated Other Agency Share	\$ _____	% of Total
List Other Non-Federal Agency	_____	
Other Non-FEMA Federal Funds	\$ _____	Do Not Include In Total
List Other Federal Agency	_____	

D. Impacts of Other Feasible Alternative Project
 Discuss the impact of this alternative on the project area. Include comments on these issues: Environmental Justice; Endangered Species; Wetlands; Hydrology (Upstream and Downstream Impacts); Floodplain/ Floodway; Historic Issues; Hazardous Materials.

- Construction of a detention pond in this area would have significant impact on several property owners. If financially feasible, these properties would be acquired at current market values. These costs will increase the project cost beyond a cost effective level.
- One of the properties, the Old Watertown Homestead, would have to be relocated to another town owned site due to historic preservation considerations.
- Environmental concerns for the alternative project could be significant. Disturbance of upstream land could disrupt wildlife species and/or flora.

VI. Environmental Documents

The applicant **must** provide the following environmental documentation to FEMA before starting construction activity **or** jeopardize project funding.

The Following Types Of Projects Do Not Require Environmental Documentation:

- Development of Mitigation Plans
- Inspection and monitoring activities
- Studies involving only staff time and funding
- Training activities using existing facilities

Other projects require certain environmental documentation depending upon the project type and its potential effects on the physical, biological and built environment. The various types of projects and their required environmental documentation follow:

Warning Systems, Shutters, And Communication Projects

- Coordination from the State Historic Preservation Officer (SHPO) regarding cultural resources (archeological and historical). **Provide the SHPO with:**
 - a description of the project referencing structure/site addresses
 - a map of sufficient scale and detail that shows the project site and surrounding project area (Area of Potential Effects)
 - several original photographs of the project site and adjacent area/structures

* See also - additional documentation section

Acquisition/Demolition And Elevation Projects Residential Sites Require

- Coordination from the State Historic Preservation Officer (SHPO) regarding cultural resources (archeological and historical). **Provide the SHPO with:**
 - a description of the project referencing structure/site addresses
 - a map of sufficient scale and detail that shows the project site and surrounding project area (Area of Potential Effects)
 - several original photographs of the project site and adjacent area/structures

Commercial/Industrial Sites also require:

- Coordination from the State Environmental Protection Agency (or equivalent) regarding hazardous waste and toxic materials.

* See also - additional documentation section

**Acquisition/Relocation Projects (Residential Only)
And
Stormwater Management Projects
(Road/Bridge/Culvert Repair, Detention Ponds And Drainage)**

Coordination from the following Federal and State agencies:

- State Historic Preservation Officer (SHPO) regarding cultural resources (archeological and historical).
Provide the SHPO with:
 - several original photographs of the project site and adjacent area/structures
- State Environmental Protection Agency (or equivalent) regarding required permits for erosion and sediment control, stormwater management, water and air quality
- State Environmental Protection Agency (or equivalent) regarding hazardous and toxic materials
- U.S. Army Corp of Engineers District regarding Individual (404 Wetlands) Permit or approval under an existing Nationwide Permit
- U.S. Fish and Wildlife Service regarding Federal Threatened and Endangered Species
- State Fish and Game Agency regarding fish and wildlife
- State Natural Heritage Agency regarding State Threatened and Endangered Species

Provide the following documentation to each agency listed above:

- a description of the project referencing structure/site addresses
- a map of sufficient scale and detail that shows the project site and surrounding project area (Area of Potential Effects)

* See also - additional documentation section

Additional Documentation

- *If the project involves five or more acres of land* – provide a NPDES permit from the U.S. Environmental Protection Agency
- *If the project is located outside of town/city limits* - provide documentation from the USDA National Resource Conservation Service (Prime, Unique or other Important Farmlands).
- *If the project is located in a coastal area* - provide letters from the:
 - State Coastal Management Agency (Coastal Zone Management Act)
 - U.S. Fish and Wildlife Service (Coastal Barrier Resources Act and Coastal Barrier Improvement Act)
 - U.S. Dept. of Commerce National Marine Fisheries Service (Commercial fishing and breeding grounds)
- *If the project will affect any low-income or minority groups in the project area* – provide applicable Environmental Justice information (census, economics, housing and employment).

FEMA Can Provide Additional Environmental Technical Assistance. Your State Hazard Mitigation Officer Can Provide FEMA Environmental Points Of Contact.

Additional Documentation and/or Site Visits May Be Required For Final Environmental Review

Attach any continuations or additional items to this page

VII MAINTENANCE AGREEMENT

All applicants whose proposed project involves the retrofit or modification of existing public property or whose proposed project would result in the public ownership or management of property, structures, or facilities, must first sign the following agreement prior to submitting their application to FEMA.

(NOTE: those applicants whose project only involves the retrofitting, elevation, or other modification to private property where the ownership will remain private after project completion DO NOT have to complete this form.)

The City of Watertown, State of AL, hereby agrees that if it receives any Federal aid as a result of the attached project application, it will accept responsibility, at its own expense if necessary, for the **routine** maintenance of any real property, structures, or facilities acquired or constructed as a result of such Federal aid. Routine maintenance shall include, but not be limited to, such responsibilities as keeping vacant land clear of debris, garbage, and vermin; keeping stream channels, culverts, and storm drains clear of obstructions and debris; and keeping detention ponds free of debris, trees, and woody growth.

The purpose of this agreement is to make clear the Subgrantee's maintenance responsibilities following project award and to show the Subgrantee's acceptance of these responsibilities. It does not replace, supercede, or add to any other maintenance responsibilities imposed by Federal law or regulation and which are in force on the date of project award.

Signed by Sally Smith (printed or typed *name of signing official*) the duly authorized
Mayor (*title*) of Watertown (*name of applicant*),
this 20 (*day*) of October (*month*), 2005 (*year*).

Signature Sally Smith

VIII Applicants Certification

Each applicant whose proposed project involves elevation of one or more residential structures or relocation or acquisition and demolition of such structures shall sign the following certification:

I, _____, of _____, of this _____, certify that that all owners of property listed in _____ (town, city, or county organization) have been contacted and have voluntarily expressed a willingness to participate in the proposed project. Any structures elevated or retrofitted shall be covered by flood insurance for the life of the structure.

Additionally, the _____ understands that any and all _____ (town, city, or county organization) property acquired under the Hazard Mitigation Grant Program will be maintained by the applicant as openspace. All property acquired in this project will be governed by the following guidelines from the Code of Federal Regulations, Section 206.434(d):

- (d) Property acquisition and relocation requirements. A project involving property acquisition or the relocation of structures and individuals is eligible for assistance only if the applicant enters an agreement with the FEMA Regional Director that provides assurances that:
1. The following restrictive covenants shall be conveyed in the deed to any property acquired, accepted, or from which structures are removed (hereafter called in section (d) the property):
 - (i) The property shall be dedicated and maintained in perpetuity for uses compatible with open space, recreational, or wetlands management practices; and
 - (ii) No new structure(s) will be built on the property except as indicated below:
 - (A) A public facility that is open on all sides and functionally related to a designated open space or recreational use;
 - (B) A rest room; or
 - (C) A structure that is compatible with open space, recreational, or wetlands management usage and proper floodplain management policies and practices, which the Director approves in writing before the construction of the structure begins.

- (iii) After completion of the project, no application for additional disaster assistance will be made for any purpose with respect to the property to any Federal entity or source, and no Federal entity or source will provide such assistance.
2. In general, allowable open space, recreational, and wetland management uses include parks for outdoor recreational activities, nature reserves, cultivation, grazing, camping (except where adequate warning time is not available to allow evacuation), temporary storage in the open of wheeled vehicles which are easily movable (except mobile homes), unimproved, previous (sic; should read "pervious") parking lots, and buffer zones.
3. Any structures built on the property according to paragraph (d)(1) of this section, shall be floodproofed or elevated to the Base Flood Elevation plus one foot of freeboard.

Any other use of acquired structures or properties must be approved by both the State and Federal Emergency Management Agencies' Directors. (Please contact your State Hazard Mitigation Officer for further details)

Certified this _____ day of _____, _____.
(day) (month) (year)

By _____
(signature of responsible official)

DRAINAGE PROJECT WORKSHEET**DRAINAGE PROJECTS ONLY****A. Site Plan**

A **site plan**, with alignment drawings, that includes the location, plan view and cross-section of cuts, fills and structures is required. Include the type, and measurements of all pipes, culverts, ditches, swales and detention/retention basins and ponds. Send the following engineering as appropriate:

- ☒ Calculations used to determine the sizes of any culverts in the project area (drainage area, amount of flow, slope of culvert, invert elevations).
- ☐ Calculations used to determine the sizes of any ditches and swales in the project area (drainage area, amount of flow, slope and depth of the ditch).
- ☐ Calculations used to determine the size of any detention/retention basins and ponds (drainage area, amount of flow, stage-storage, and stage-discharge curves).
- ☐ Topographic maps

B. Environmental Impacts

Both upstream and downstream impacts need to be considered and discussed in the NEPA documents and coordination letters.

C. Letter of Map Revision (LOMR)

A Letter of Map Revision may be needed on this project. Any changes to the Flood Insurance Rate Maps (FIRM) need to be reflected on the flood maps, which is accomplished through the LOMR process. The construction of this project may lower the 100-year flood elevation and thus, possibly lower the flood insurance rates for structures in the project area.

If the project is located in a regulatory floodway, a no-rise certification or Conditional Letter of Map Revision will be required.

D. Project Scheduling

Note below any special circumstances regarding project scheduling.

RIVERINE LIMITED DATA MODULE

Version 5.2.2
December 31, 1998

Report of Benefit-Cost Analysis

Project Address	Main St/Swift Creek Culvert
City, State, Zip	Watertown, AL
County	City of Watertown
Applicant	City of Watertown
Contact Person	Ms Jones
Analysis Date	1 FEBRUARY 2006
Analyst	RAB
Scenario Run ID	
File Save As Name	Watertown Culvert
Disaster Number	1605 DR
DSR Number	

EXAMPLE ONLY

FEMA Disclaimer.

The results produced by this analysis are neither conclusive evidence that the proposed project is cost-effective, nor a guarantee that a project is eligible for any government grant for whatever purpose.

BCA ATTACHMENT # 1

RIVERINE LIMITED DATA MODULE

Benefit-Cost Analysis of Flood Mitigation Projects

Page 1

PROJECT INFORMATION

Disaster Number	1605 DR	Project Address	Main St/Swift Creek Culvert Upgrade
DSR Number		City, State, Zip	Watertown, AL
DSR Category		County	Waterford
DSR Subject		Applicant	City of Watertown
Inspection Date		Contact Person	Ms Jones
Application Date	15 JANUARY 2006	Scenario Run ID	
Analysis Date	1 FEBRUARY 2006	File Save As Name	Watertown Culvert
Analyst	RAB		

PROJECT DATA

Replace existing 60' cmp with twin 5'X5' precast conc box culvert under Main St

Project Useful Life (Years)	30
Base Year of Costs	2006
Historic Preservation Issues (Yes or No)?	no
Environmental Issues (Yes or No)?	no

Economic Factors:	Discount Rate (%)	7.00	Present Value Coefficient	12.41
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Net Mitigation Project Cost:	\$153,650
Notes:	

Additional Annual Maintenance Cost (\$/year) for Mitigation Project	\$2,500
Present Value of Additional Annual Maintenance Cost (\$)	\$31,023
TOTAL MITIGATION PROJECT COST	\$184,673

TYPE OF FACILITY (for Loss of Function)	ROADS/BRIDGES
--	---------------

FACILITY DESCRIPTION	
----------------------	--

Loss of Function for Roads/Bridges	
Estimated Number of One-Way Traffic Trips Per day	10000
Estimated Delay (Detour) Time Per One Way Trip (hours)	0.25
Economic Loss Per Hour of Delay: ordinary traffic	\$33.00
Emergency or Commercial Traffic Premium Per Hour of Delay	\$0.00
Total Economic Loss Per hour of Delay	\$33.00
Economic Loss Per Day of Loss of Function of Bridge or Road	\$82,500

FLOOD HISTORY

Estimated Frequency of Declared Flood Event (Years)	
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Data Sources and Documentation

information provided by applicant; NWS, NOAA, Alabama DOT

RIVERINE LIMITED DATA MODULE**Benefit-Cost Analysis of Flood Mitigation Projects**

Page 2

DAMAGES BEFORE MITIGATION

Flood Frequency Events (Years)	Scenario Flood Damages			Loss of Function Time and Dollars		TOTAL Damages and Losses
	A	B	C	Days	Losses	
1					\$0	\$0
2	\$40,000			0.08	\$6,600	\$46,600
5	\$15,000	\$15,000		0.17	\$14,025	\$44,025
10	\$40,000	\$40,000		0.25	\$20,625	\$100,625
15	\$100,000			0.50	\$41,250	\$181,250
50					\$0	\$181,250
100					\$0	\$181,250
250					\$0	\$181,250
500					\$0	\$181,250
Total Annualized Damages						\$36,898

Data Sources and Documentation

Data from City of Watertown records; Alabama DOT

DAMAGES AFTER MITIGATION

Flood Frequency Events (Years)	Scenario Flood Damages			Loss of Function Time and Dollars		TOTAL Damages and Losses
	A	B	C	Days	Losses	
1					\$0	\$0
2					\$0	\$0
5					\$0	\$0
10					\$0	\$0
15					\$0	\$0
50					\$0	\$0
100	\$100,000			1.00	\$82,500	\$182,500
250	\$100,000			1.00	\$82,500	\$182,500
500	\$100,000			1.00	\$82,500	\$182,500
Total Annualized Damages						\$1,825

Data Sources and Documentation

Estimates calculated by ABC Engineers inc

SUMMARY OF BENEFITS AND COSTS

Expected Annual Damages Before Mitigation
 Expected Annual Damages After Mitigation
 Expected Avoided Damages After Mitigation (BENEFITS)

Expected Annual Value

\$36,898	\$457,869
\$1,825	\$22,646
\$35,073	\$435,223

PROJECT COSTS

\$184,673

PROJECT BENEFITS

\$435,223

BENEFITS MINUS COSTS

\$250,551

BENEFIT-COST RATIO

2.36

Data Sources and DocumentationEXAMPLE ONLY

FEMA Disclaimer: The results produced by this analysis are neither conclusive evidence that a proposed project is cost-effective, nor a guarantee that a project is eligible for any government grant for whatever purpose.

APPLICANT'S LETTERHEAD

Mr. Stan Cook, Chief
Fisheries Section
Alabama Department of Conservation and Natural Resources
64 N. Union Street
Montgomery, Alabama 36130

RE: Letter of Concurrence – FEMA Hazard Mitigation Grant Program, City of _____
County – Drainage Improvements

Dear Mr. Cook,

The City of _____ is seeking assistance from the Federal Emergency Management Agency under the Hazard Mitigation Grant Program to address continuing flooding in the area of _____ (see attached maps). The City is proposing to construct drainage improvements on existing rights-of-way consisting of the demolition and removal of the existing undersized drainage pipes, the installation of box culverts, wing-walls, parapets, and aprons, and the reclamation and repair of the City streets and residential driveways which will be impacted by the construction.

To obtain Federal funding, concurrence from the Fisheries Section of the Alabama Department of Conservation and Natural Resources is essential. If you require any additional information regarding this project please do not hesitate to call me at (256) 237-6741.

If I or the East Alabama Commission may be of further assistance, please advise.

Sincerely,

SAMPLE LETTER ONLY

ATTACHMENT # 2

APPLICANT'S LETTERHEAD

Mr. Gary H. Moody, Chief
Alabama Department of Conservation and Natural Resources
Wildlife Section
64 N. Union Street
Montgomery, Alabama 36130

RE: Letter of Concurrence – FEMA Hazard Mitigation Grant Program, City of
– County – Drainage Improvements

Dear Mr. Moody,

The City of is seeking assistance from the Federal Emergency Management Agency under the Hazard Mitigation Grant Program to address continuing flooding in the area of I (see attached maps). The City is proposing to construct drainage improvements on existing rights-of-way consisting of the demolition and removal of the existing undersized drainage pipes, the installation of box culverts, wing-walls, parapets, and aprons, and the reclamation and repair of the City streets and residential driveways which will be impacted by the construction.

To obtain Federal FEMA funding, concurrence from the Wildlife Section of the Alabama Department of Conservation and Natural Resources is essential. If you require any additional information regarding this project please do not hesitate to call me at (256) 237-6741.

If I or the East Alabama Commission may be of further assistance, please advise.

Sincerely,

SAMPLE LETTER ONLY

ATTACHMENT # 3

APPLICANT'S LETTERHEAD

Mr. Mark Sasser, Coordinator
Nongame Wildlife Program
Alabama Department of Conservation and Natural Resources
64 N. Union Street
Montgomery, Alabama 36130

RE: Letter of Concurrence – FEMA Hazard Mitigation Grant Program, _____
– Drainage Improvements.

Dear Mr. Sasser,

The _____ is seeking assistance from the Federal Emergency Management Agency under the Hazard Mitigation Grant Program to address continuing flooding in the area of _____ (see attached maps). The City is proposing to construct drainage improvements on existing rights-of-way consisting of the demolition and removal of the existing undersized drainage pipes, the installation of box culverts, wing-walls, parapets, and aprons, and the reclamation and repair of the City streets and residential driveways which will be impacted by the construction.

To obtain Federal FEMA funding, concurrence from the State Department of Conservation and Natural Resources regarding State Threatened and Endangered Species in the project area is essential. If you require any additional information regarding this project please do not hesitate to call me at (256) 237-6741.

If I or the East Alabama Commission may be of further assistance, please advise.

Sincerely,

SAMPLE LETTER ONLY

ATTACHMENT # 4

APPLICANT'S LETTERHEAD

Ms. Stacey Hathorn
Alabama Historical Commission
468 South Perry Street
Montgomery, AL 36130-0900

RE: Alabama Historical Commission Concurrence – FEMA Hazard Mitigation Grant
Program, Drainage Improvements

Dear Ms. Hathorn,

The City of Montgomery is seeking assistance from the Federal Emergency Management Agency under the Hazard Mitigation Grant Program to address continuing flooding in the area of [redacted] (see attached maps). The City is proposing to construct drainage improvements on existing rights-of-way consisting of the demolition and removal of the existing undersized drainage pipes, the installation of box culverts, wing-walls, parapets, and aprons, and the reclamation and repair of the City streets and residential driveways which will be impacted by the construction.

I have enclosed photographs showing representative houses in the project area. This proposed project area is subject to repetitive flooding, resulting in both property and structural damage. To obtain Federal funding, coordination with the Alabama Historical Commission is essential. If you require any additional information regarding this project please do not hesitate to call me at (256) 237-6741.

If I or the East Alabama Commission may be of further assistance, please advise.

Sincerely,

SAMPLE LETTER ONLY

ATTACHMENT #5

APPLICANT'S LETTERHEAD

U. S. Army Corps of Engineers
Attn: Regulatory Branch, Mr. Arthur Hosey
P. O. Box 2288
Mobile, AL 36628-0001

RE: Corps of Engineers Concurrence – FEMA Hazard Mitigation Grant Program,
– Etowah County – Drainage Improvements

Dear Mr. Hosey,

The _____ is seeking assistance from the Federal Emergency Management Agency under the Hazard Mitigation Grant Program to address continuing flooding in the area of _____ (see attached maps). The City is proposing to construct drainage improvements on existing rights-of-way consisting of the demolition and removal of the existing undersized drainage pipes, the installation of box culverts, wing-walls, parapets, and aprons, and the reclamation and repair of the City streets and residential driveways which will be impacted by the construction. No existing receiving streams will be impacted by the proposed construction, and there will be no impact at all on the _____.

To obtain Federal FEMA funding, coordination of the project with the US Army Corps of Engineers is essential. If you require any additional information regarding this project please do not hesitate to call me at (256) 237-6741.

If I or the East Alabama Commission may be of further assistance, please advise.

Sincerely,

SAMPLE LETTER ONLY

ATTACHMENT #6